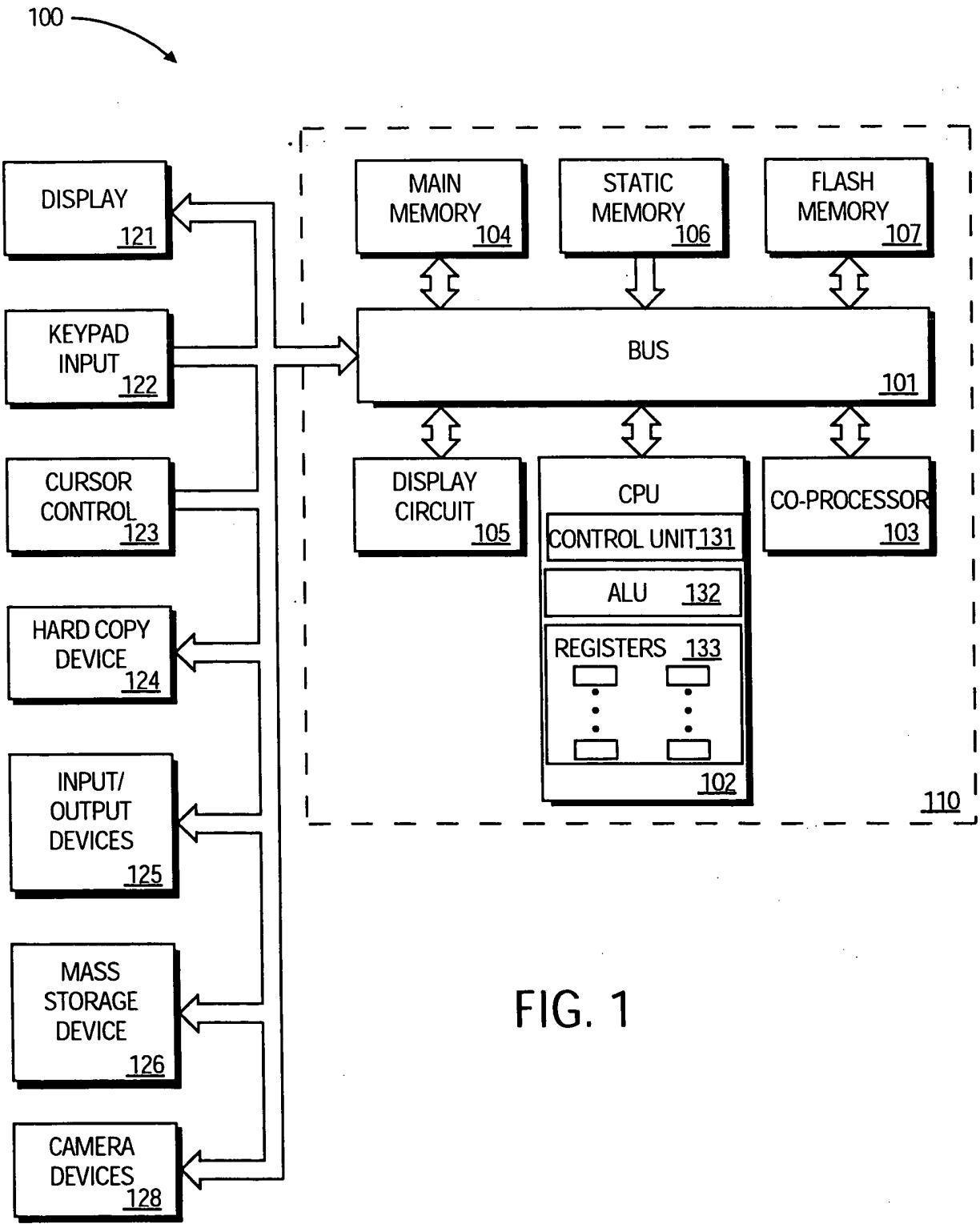
100
DISPLAY
121
KEYPAD
INPUT
122
CURSOR
CONTROL
123
HARD COPY
DEVICE
124
INPUT/
OUTPUT
DEVICES
125
MASS
STORAGE
DEVICE
126
CAMERA
DEVICES
128
MAIN
MEMORY
104
STATIC
MEMORY
106
FLASH
MEMORY
107
BUS
101
DISPLAY
CIRCUIT
105
CPU
CONTROL UNIT 131
ALU 132
REGISTERS 133
102
CO-PROCESSOR
103
110

FIG. 1

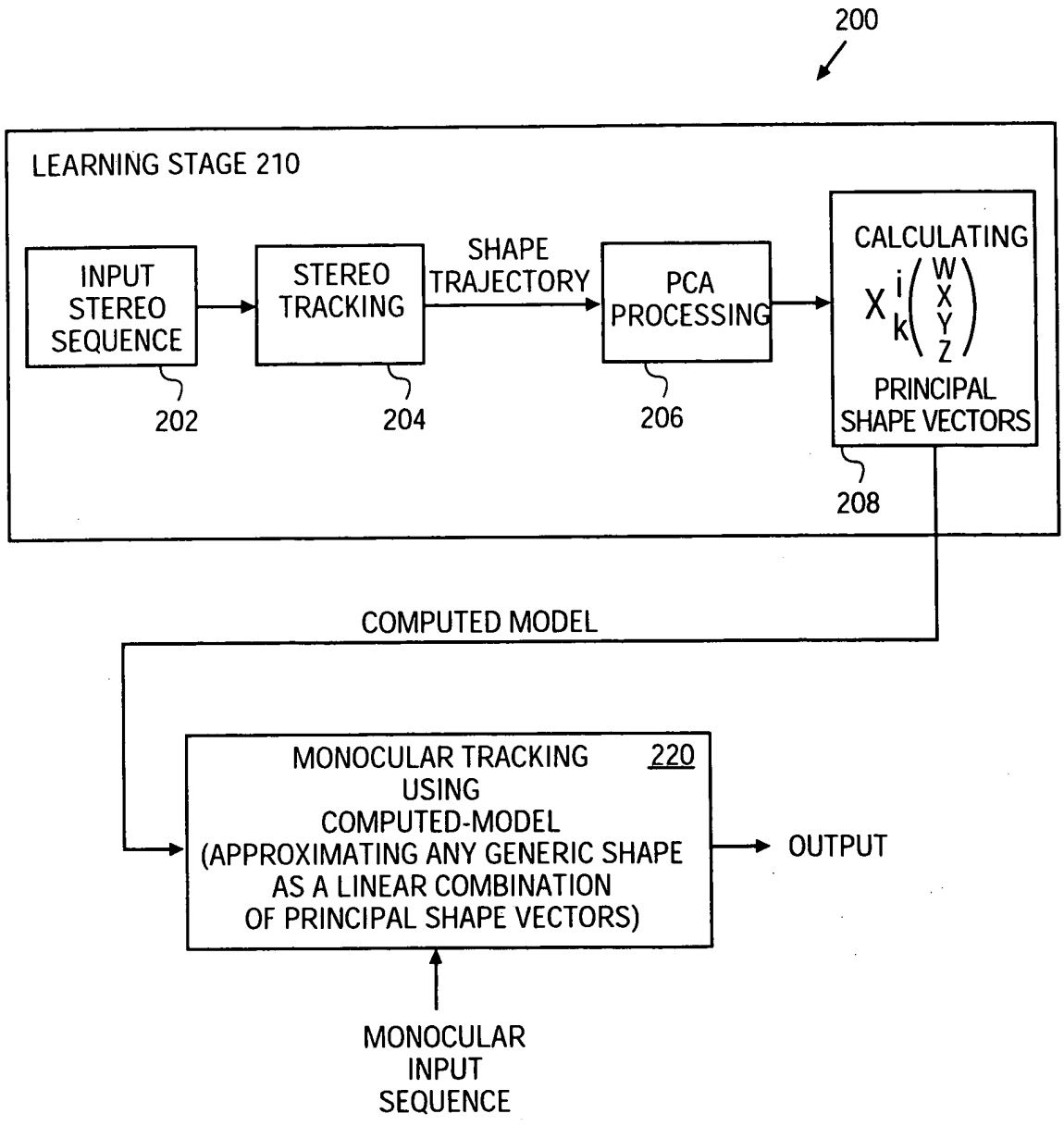
200
LEARNING STAGE 210
INPUT STEREO SEQUENCE
STEREO TRACKING
SHAPE TRAJECTORY
PCA PROCESSING
CALCULATING
PRINCIPAL SHAPE VECTORS
202
204
206
208
COMPUTED MODEL
MONOCULAR TRACKING USING COMPUTED-MODEL (APPROXIMATING ANY GENERIC SHAPE AS A LINEAR COMBINATION OF PRINCIPAL SHAPE VECTORS)
220
OUTPUT
MONOCULAR INPUT SEQUENCE

FIG. 2

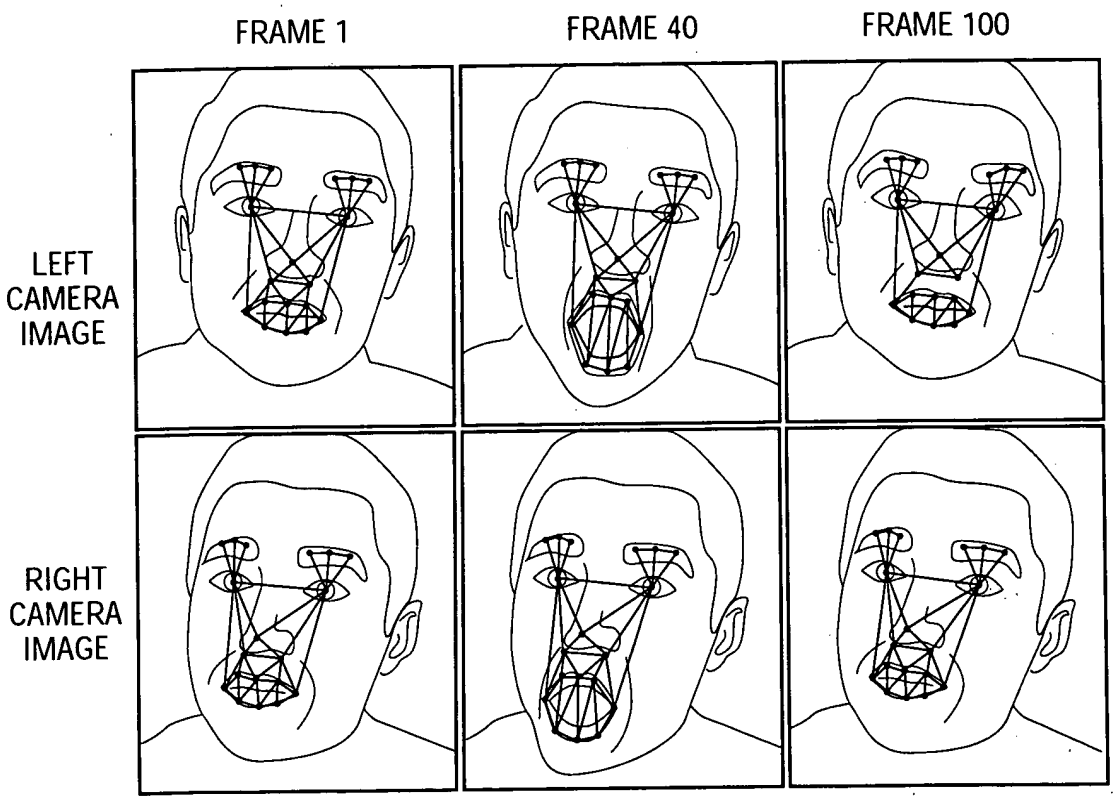
FRAME 1
FRAME 40
FRAME 100
LEFT CAMERA IMAGE
RIGHT CAMERA IMAGE

FIG. 3

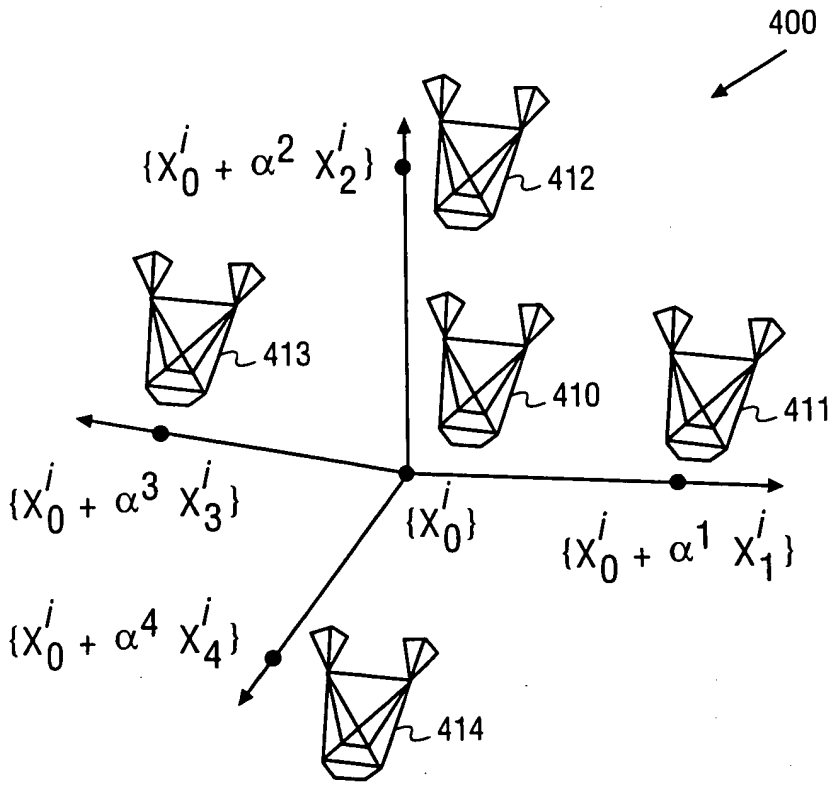
400
$\{X_0^i + \alpha^2 X_2^i\}$
412
413
410
411
$\{X_0^i + \alpha^3 X_3^i\}$
$\{X_0^i\}$
$\{X_0^i + \alpha^1 X_1^i\}$
$\{X_0^i + \alpha^4 X_4^i\}$
414

FIG. 4

TO6059 "86258"

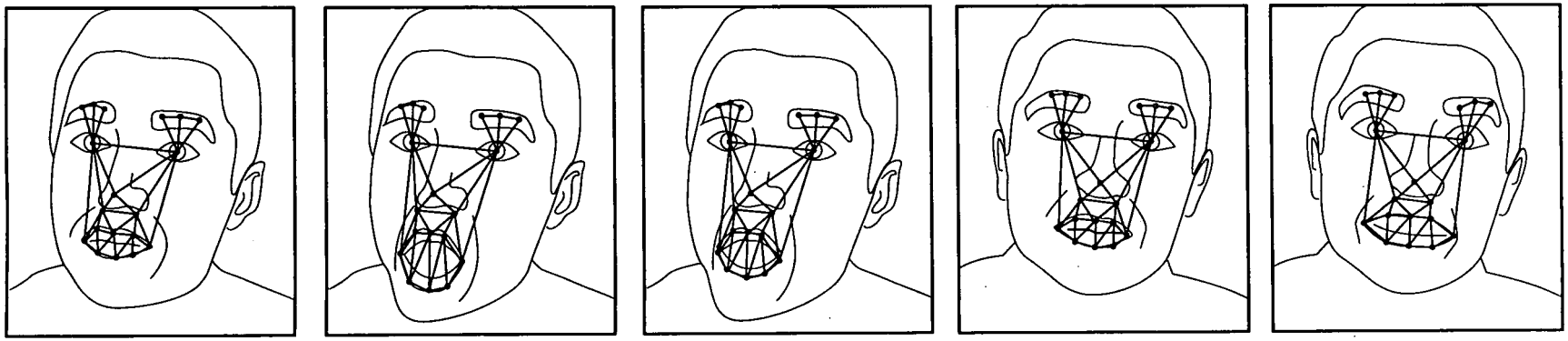

FIG. 5

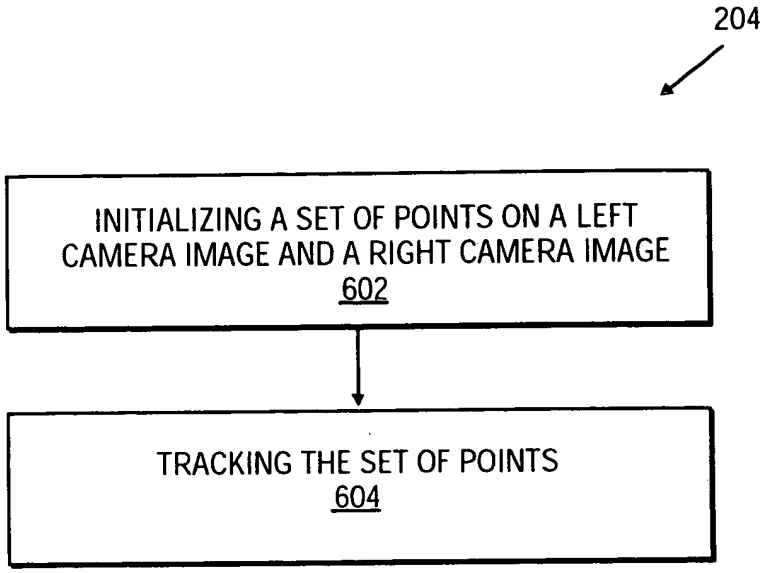
204
INITIALIZING A SET OF POINTS ON A LEFT CAMERA IMAGE AND A RIGHT CAMERA IMAGE
602
TRACKING THE SET OF POINTS
604

FIG. 6

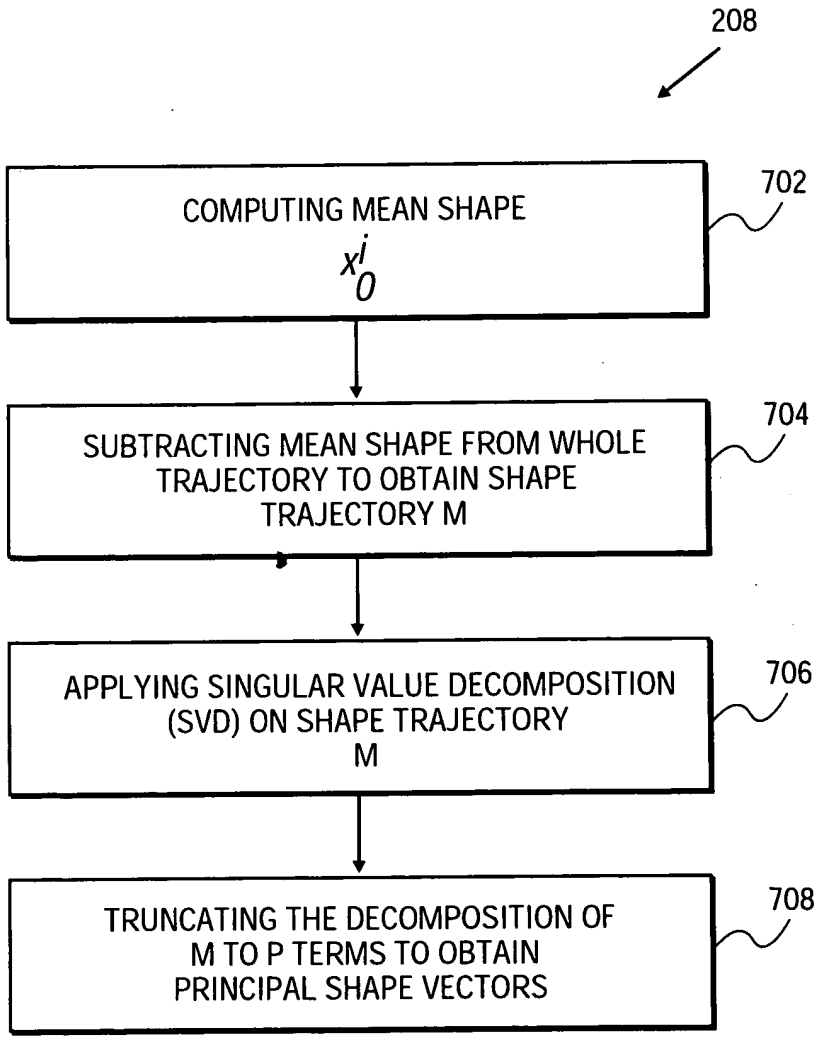
208
COMPUTING MEAN SHAPE
x_0^i
702
SUBTRACTING MEAN SHAPE FROM WHOLE TRAJECTORY TO OBTAIN SHAPE TRAJECTORY M
704
APPLYING SINGULAR VALUE DECOMPOSITION (SVD) ON SHAPE TRAJECTORY M
706
TRUNCATING THE DECOMPOSITION OF M TO P TERMS TO OBTAIN PRINCIPAL SHAPE VECTORS
708

FIG. 7

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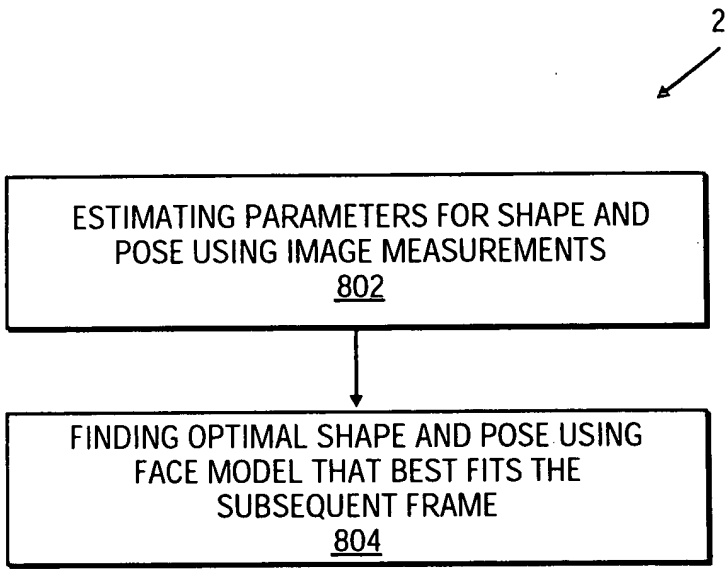

FIG. 8